

SIEMENS

MULTIMOBIL 10

SP

Pre-Installation

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Multimobil 10

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Pre-Installation Instructions
Version: 4.0

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1	PRE-INSTALLATION :	3
1.1	TECHNICAL SPECIFICATIONS :	3
1.2	EMI/ EMC COMPLIANCE	5
1.3	INFORMATION FOR ROOM PLANNING :	10

1 Pre-Installation :

1.1 Technical Specifications :

Sr. No.	Parameter	Value
1.	Mains Voltage	1 ϕ , 110 V AC or 200 V – 240 V AC
2.	Line frequency	50 /60 Hz, \pm 2 Hz
3.	Line fuses	10 A delayed fuse.
4.	Length of power cable	5 mtr.
5.	Power Output Nominal Electric power at 100kV and 100mSec.	10 kW
6.	Wave Shape	Multipulse - Ripple 5kV max
7.	kVp Range	40 - 125kV in 24 steps
8.	kV Accuracy	$\leq \pm 5 \%$
9.	mA-range	60 – 160 mA
10.	mAs Range	0.50 – 125mAs at 40 - 48kV
		0.40 – 125mAs at 50 - 57kV
		0.32 – 125mAs at 60 - 63kV
		0.32 - 100 mAs at 66 - 77kV
		0.32 – 80 mAs at 81 - 96kV
		0.32 - 64 mAs at 102 – 125kV
11.	mAs Accuracy	$\leq 10 \%$ for mAs ≤ 20 mAs
		$\leq 5 \%$ for mAs > 20 mAs
12.	Exposure Time	4 m Sec –2.5 Sec
13.	X - ray Tube	Rotating Anode X-Ray tube X20 – IAE 130/11 or X22 – IAE 130 / 16 Nominal Speed 2800 r.p.m., 50 Hz
14.	Focal Spot – nominal value	0.8 mm EN-336
15.	Anode angle	17.5° / 15°
16.	Application	Radiographic operation, according to exposure table
17.	Mode of Operation	Continuous operation with Intermittent loading
18.	Collimator	Manually adjustable, Double Slot
19.	Inherent Filtration	

Sr. No.	Parameter	Value
	X – Ray Source Assembly	1.9 mm Al
	Collimator	2.1 mm Al
	Totally	4 mm Al
20.	Light localizer	Halogen light Bulb 12V, 100 W; ≥ 100 Lux at 1mtr SID.
21.	Max. Cassette size at 1m SID	17 X 17
22.	Total Filtration of the X-ray source assembly with collimator	4 mm Al
23.	Exposure Switch	2 Step, 5 mtr cable
24.	Exposure Rate	Pulse-to-pause ratio 1:30; corresponds to a cool down period of 3 minutes at maximum output.
25.	Power Input: Momentary input Long-time input	1.0 KVA ($\pm 10\%$) 90 VA ($\pm 10\%$)
26.	Mains Isolation	Double Pole Switch is Provided at the Power cord Inlet
27.	Cassette Compartment	Maximum space
28.	Weight	
	Total without Packing	Approx. 125 kg.
	Total with Packing	Approx. 180 kg.
29.	Max. floor incline for transport	10°
30.	Type and degree of protection against electrical shock	Class – I, Type B Equipment.
31.	Environmental conditions Transport and Storage Temp range. Relative Humidity range Atmospheric pressure	0 to 55° C Upto 95% 760 hpa to 1060 hpa
	Operating Temperature Relative Humidity range Atmospheric pressure	+10° C to +40° C 30 % to 75% non condensing 760 hpa to 1060 hpa
32.	Mechanical Dimensions	

Sr. No.	Parameter	Value
	Without Packing	1740 x 645 x 1740 mm
	With Packing	1900 x 800 x 2035 mm
33.	Conformance to Standards	<p>EN 60601 – 1</p> <p>“X-RAY EQUIPMENT Model no. 5454” with radiation protection is in accordance with EN 601 – 1 – 3: 1994.</p> <p>X RAY GENERATOR 5454 EN 60601-2-7:1998.</p> <p>Compliance to AERB Type Approval Certification.</p> <p>Compliance to BIS Test Certification, Class I, Type B (IS: 7620)</p>

1.2 EMI/ EMC compliance

Manufacturer’s Declaration – Electromagnetic emissions		
Multimobil 10 Model No.5454 is intended for use in the electromagnetic environment specified below. The Customer or user of Multimobil 10 should assure that it is used in such an environment		
Emissions test	Compliance	Electromagnetic environment - guidance
RF emissions CISPR 11	Group 1	Multimobil 10 uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11	Class B	Multimobil 10 is suitable for use in all establishments, including domestic establishments and those directly connected to the public low – voltage power supply network that supplies buildings used for domestic purposes.
Harmonic emissions EN 61000 –3 –2	Complies	
Voltage fluctuations/Flicker emissions EN 61000 – 3 – 3	Complies	

Manufacturer's Declaration – Electromagnetic Immunity			
Multimobil 10 is intended for use in the electromagnetic environment specified below. The customer or the user of Multimobil 10 should assure that it is used in such an environment			
Immunity test	EN 60601 test level	Compliance level	Electromagnetic environment guidance
Electrostatic discharge (ESD) EN 61000 – 4 – 2	±6 kV contact ±8 kV air	±6 kV contact ±8 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%
Electrical fast transient/burst EN 61000 – 4 – 4	±2 kV for power supply lines ±1 kV for input/output lines	±2 kV for power supply lines ±1 kV for input/output lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge EN 61000 – 4 – 5	±1 kV differential mode ±2 kV common mode	±1 kV differential mode ±2 kV common mode	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines EN 61000 – 4 – 11	<5% U_r for 0.5cycle 40% U_r for 5 cycles 70% U_r for 25 cycles <5% U_r for 5 Sec (U_r is the nominal mains voltage)	<5% U_r for 0.5cycle 40% U_r for 5 cycles 70% U_r for 25 cycles <5% U_r for 5 Sec	Mains power quality should be that of typical commercial or hospital environment. If user of Multimobil 10 requires continued operation during power mains interruptions, it is recommended that Multimobil 10 be powered from an uninterrupted power supply or a battery.

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Immunity test	EN 60601 test level	Compliance level	Electromagnetic environment guidance
Power frequency magnetic field EN 6100 – 4 – 8	3 A/m	3 A/m`	Power frequency magnetic fields should be at level characteristic of a typical location in a typical commercial or hospital environment.

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Immunity test	EN 60601 test level	Compliance level	Electromagnetic environment guidance

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Immunity test	EN 60601 test level	Compliance level	Electromagnetic environment guidance
<p>Conducted RF EN 61000 – 4 – 6</p> <p>Radiated RF EN 61000 – 4 – 3</p>	<p>3 Vrms 150 kHz to 80 MHz</p> <p>3 V/m 80 MHz to 2.5 GHz</p>	<p>3 Vrms</p> <p>10 V/m</p>	<p>Portable and mobile RF communications equipment should be used no closer to any part of the Multimobil10, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.</p> <p>Recommended separation distance</p> $d = 1.2 \sqrt{P}$ <p>$d = 0.35 \sqrt{P}$ 80 MHz to 800 MHz</p> <p>$d = 0.7 \sqrt{P}$ 800 MHz to 2.5 GHz</p> <p>Where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended distance in metres (m).</p>

Manufacturer's Declaration – Electromagnetic Immunity			
Multimobil 10 is intended for use in the electromagnetic environment specified below. The customer or the user of Multimobil 10 should assure that it is used in such an environment			
Immunity test	EN 60601 test level	Compliance level	Electromagnetic environment guidance
			<p>Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey, ^a should be less than the compliance level in each frequency range. ^b</p> <p>Interference may occur in the vicinity of equipment marked with the following symbol:</p> <div style="text-align: center;">  </div>
<p>NOTE 1 At 80 MHz and 800 MHz, the higher frequency range applies.</p> <p>NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.</p>			
<p>^a</p> <p>Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitter, an electromagnetic site survey should be considered. If the measured field strength in the location in which the Multimobil 10 is used exceeds the applicable RF compliance level above, the Multimobil 10 should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the Multimobil 10.</p> <p>^b</p> <p>Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.</p>			

1.3 Information for Room Planning :

No specific conditions required. Following are the recommended room conditions for proper functioning of the unit.

Ambient Temperature (Room temperature): Max + 40 °C

Air Humidity: up to 95%, Non-condensing.

During Transport and storage of all products the ambient temperature should not be below -20°C or rise above +50°C. Storage is permissible in rooms with minimum amount of dust and Humidity in range of 30% to 97% RH provided no condensation occurs.